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ABSTRACT

An analysis is presented of data on participation in leisure time and physical activities by such groups as the general population, employees, and students. Studies were made of community sponsored programs, employee fitness programs, and student physical activities. Leisure time physical activity findings are described within the categories of: reported physical activity; reasons for such behaviors; attitudes and perceptions regarding physical activity; changes in physical activity patterns; and fitness-related information. The range, participation level, and operational costs of employee fitness programs are briefly described. It is noted that there is very little dependable information available at this time on student physical activity in the nation's schools and colleges, and that information for elementary schools is almost completely absent. Suggestions are offered for data collection and analysis on this topic, and issues which should be addressed in future research are identified. (JD)

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Office of Disease Prevention and Health Promotion

SUMMARY REPORT
ON
AN ASSESSMENT OF THE NATURE AND EXTENT OF COMMUNITY AND EMPLOYEE FITNESS PROGRAMS AND LEVELS OF PARTICIPATION

REPORT NO. 10

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Office of Disease Prevention and Health Promotion
Department of Health and Human Services
October 19, 1982

This report is made pursuant to Modification 13 of Contract No. 282-78-0183-DN. The persons employed by the contractor with management and professional responsibility for the work, including the content of the report are Charles H. Lupton, Nancy M. Ostrove, and Robert M. Bozzo.

Contractor:

Granville Corporation
Health and Human Services Group

PARTICIPATION IN LEISURE-TIME PHYSICAL ACTIVITY: A COMPARISON OF THE EXISTING DATA

INTRODUCTION

Recently, The Granville Corporation completed a comprehensive review of available information on leisure time physical activity patterns and programs in the United States.[1] In addition, data on employee fitness programs and student participation in other sports, exercise, and physical fitness programs were assessed. The goal of this effort was to provide the sponsoring agency, the Office of Disease Prevention and Health Promotion (ODPHP), within the U.S. Department of Health and Human Services, with baseline information on physical fitness and exercise against which future trend data and progress toward national objectives could be measured. The review produced an extensive and interesting body of knowledge about leisure time physical activity in this country.

DATA COLLECTION APPROACH

In the search for general population, employee and student physical fitness and physical activity information, a variety of

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approaches were used to insure the collection of the most complete set of information possible. First, through Granville's previous work for ODPHP on physical fitness and sports topics, a number of pertinent documents and sources had been identified. Second, Granville contacted major organizations having a primary interest in physical fitness, exercise and related activities (e.g., the President's Council on Physical Fitness and Sports) to obtain whatever information they had. Leads from these organizations were followed up until all identified sources had been contacted. Third, in a networking process similar to the activities described above, inforamtion was sought from organizations and individuals having less promiment interest in physical fitness or exercise. Fourth, Granville conducted several bibliographic searches to identify relevant articles and books. The result was the collection of a number of surveys, large scale outcome studies, and program descriptions. Small scale research or prescriptive documents were neither sought nor reported.

FINDINGS

Most of the useful information uncovered by this effort came from 13 surveys of the general population (see references at end of article). Eleven of these surveys were based on national area probability samples of the U.S. adult population. Two other surveys dealt with YMCA and YWCA programs. Thus, our primary emphasis was on collecting representative data for the nation rather than on small scale surveys or studies. Therefore, infor-

mation on general population represents the bulk of this article. However, some other useful data were gleaned from the review of data concerning employee fitness programs and student program and participation; this information is presented at the end of the section.

General Population

Leisure time physical activity findings for the general population can best be described within the categories of: reported physical activity, reasons for such behaviors, attitudes and perceptions regarding physical activity, changes in physical activity patterns, and fitness-related information.

Reported Physical Activity. The proportion of persons who participate in regular exercise was found to vary from 36 to 59 percent depending on the definition of regular exercise that was used. When regular exercise was defined as planned exercise several times a week, 36 percent of surveyed individuals indicated such participation. In contrast, if it was considered to be regular activity at any time during the year, a much higher percent (59%) of persons were found to be regular exercisers. In general, persons who exercise on a fairly regular basis were more likely to be:

- Younger as opposed to older persons
- Men more than women
- Whites as opposed to non-whites
- Persons with higher levels of education and income
- Individuals living in suburban as opposed to urban or rural/small town communities
- People residing in the West; the lowest participation rates were shown by persons from the South.
- Single parents more frequently than other parents with children.

There was an insufficient amount of information to permit a reliable determination of the average amount of time that people spend in exercise and sports, the frequency with which the activity is engaged in, or its intensity.

Far and away the greatest number of surveys collected data on participation in specific forms of exercise, sports and recreation. Since the percentage of those reporting participation in each activity is widely varied, the most useful information came from making relative comparisons. This was accomplished by rank ordering activities by participation levels within each survey and comparing the rank orders of each specific activity across surveys. When such ranking is performed, the most popular activities, in order of preference, were found to be walking, swimming, bicycling, bowling, calisthenics, hiking, softball, basketball, running/jogging and tennis.

In addition, the demographic variables of age, sex, race, education, income, region, and occupation were investigated for their potential relationships with participation in specific

activities. In general, demographic relationships with participation in most exercises and sports were the same as those for regular exercise, e.g., younger persons participated more frequently than older persons, etc. Exceptions to and elaborations on the general parallels between regular exercise involvement and participation in specific activities follow:

- Participation in walking and golf did not decline with age
- Males tended to participate in more vigorous forms of exercise than did females
- Non-whites participated in jogging more often than whites
- For many exercises or sports, college and high school graduates participated three to five times more often than grade school graduates
- Participation in walking and jogging was consistent across income levels
- Few regional differences were found
- Clerical and sales/white collar workers were a little less likely to participate in athletic activities than blue collar or executive/professionals.

Reasons. Our review indicated that the reasons people gave for first becoming involved in exercise were different from the reasons for current participation. Individuals started to exercise primarily for fitness and health reasons rather than for enjoyment or social reasons. On the other hand, continued involvement occurred more for enjoyment than fitness reasons. Further inspection revealed that persons who exercise perceived that a great number of physical (e.g., healthier, increased stamina)

and psychological (e.g., less tense, sleep better) benefits accrued to them; these benefits were perceived to be greater for those persons who exercise more. In contrast, few social benefits were perceived to be associated with exercise and sports participation.

The major finding about the primary reasons for not getting enough exercise was that most of them are self-imposed. The reported reasons are:

- Lack of time
- Takes too much discipline/motivation
- Not interested or don't like
- Poor health

Age-specific results show that lack of time was less of a factor for persons over age 50, poor health increased with age, and older persons were less interested in exercising in general.

Factors that were most likely to increase a person's chances of involvement in exercise included a physician's recommendation, nicer weather, four day work week, and greater availability of facilities. However, a small portion of the population (roughly 10%) appeared to be intransigent about their non-exercise behavior; no factor was reported as likely to increase their involvement.

Attitudes and Perceptions. Our review of available sources produced information regarding people's attitudes about their own levels of fitness and physical activity, the important

types of exercise, and the amount of exercise needed to keep fit. Regarding individuals satisfaction with their own levels of physical fitness, most of the population seemed to be at least somewhat satisfied with their physical condition. A minority (31% of men and 27% of women) were very satisfied with their condition. Dissatisfaction with physical condition was expressed by only 17 percent of men and 20 percent of women.

The picture changes dramatically when survey respondents were asked about satisfaction with their exercise behavior. Depending on the survey, between 40 and 55 percent of the population did not believe that they get enough exercise. Interestingly, a large proportion of more active persons thought that they should be more active than they currently were. Older persons in general reported getting less exercise but believed the amount they got was sufficient. It appears that those who participate even a little seem to have accepted exercise as beneficial, while non-participants tend to be more impervious to the fitness message. However, we also found that most people believed they are equally active or more active than their peers. Given the proportion of persons believing they should get more exercise, it seems reasonable to hypothesize that the tendency to oneself as similar to most other people appears to be a strong inhibitor of behavior change. Finally, there was some indication that, in the minds of most people, physical exercise has not been firmly associated with better health status.

Exercises that strengthen the heart and improve blood circulation, such as running or swimming, were considered to be the

most important forms of physical activity. Three-quarters of the respondents gave this response. Moreover, the respondents displayed a fairly good knowledge of the relative contributions of three sessions a week of various activities to physical fitness. However, sizeable minorities incorrectly felt that three sessions per week of bowling or golf would be sufficient to maintain an adequate fitness level.

Changes in Physical Activity Patterns. In general, no dramatic changes were evident during the 1972 to 1980 period included in our review. Participation rates from a 1972 survey are similar to, and in fact a little higher than, most participation rates from surveys from 1975 to 1980. However, the intensity of participation appears to have changed, although the basic rates have not. Trend data for participation in specific activities indicate a recent shift toward greater participation in more strenuous and vigorous activities such as running/jogging, tennis and racquetball. Further, 1978 information showed that a majority of persons maintained the same level of exercise over the previous year or two, while over 20 percent increased, and another 20 percent decreased their level of activity. However, other data indicate that 40 percent of regular exercisers began such activity in the preceding year and 60 percent in the preceding two years. Given a constant rate of participation, this suggests that many adults may have intermittent involvement in exercise.

A final aspect of change in exercise patterns was concerned with extent to which inactive persons planned to become more active or to begin regular exercise. In general the re-

sults revealed that a majority of inactive persons intended to remain that way. However, approximately one out of seven indicated that they were very likely to increase their level of exercise.

Fitness-Related Information. In terms of general health care information, 28 percent of the population consider themselves well-informed, 44 percent as somewhat informed, and 28 percent as poorly informed. When the topic is narrowed to new ideas on health care and physical fitness, the proportions become 13 percent well-informed, 62 percent somewhat informed, and 25 percent poorly informed. More teenagers, however, believe that they are well-informed (31%) on the latter topic. Interestingly, almost a third of those well-informed individuals have increased their levels of exercise, as compared to 21 percent for somewhat informed individuals and 20 percent for poorly informed persons.

The results of our study showed that physicians are the largest source of health care information. Other major sources include television programs, public service messages, and news stories; magazine and newspaper articles; and publications from voluntary health organizations. In addition, the desire for fitness-related information, as compared with other types of health information, was in the average to low average range. Information about high blood pressure, cancer and heart disease was most desired.

Physical Fitness Programs. The only available information about physical fitness programs came from the YWCA and the YMCA. The YWCA reported that its community associations throughout the

country offered 71,000 physical education and athletics programs, with more than 900,000 participants, during the year ending August 1980. Although breakdowns by state were available for programs and participation, information regarding more detailed aspects of program functioning, e.g., program content, was not provided.

A YMCA survey of member organizations in March 1982 regarding health enhancement programs revealed that 96% of the local YMCAs had fitness and exercise programs. In fact, these programs were twice as common as any other form of health enhancement program, e.g., nutrition and weight management. The most common types of fitness and exercise programs included aerobic dance, general fitness, aquatic fitness, and personalized programs for fitness. No other information about the programs (e.g., number of participants) was reported.

Based on information from other surveys, it would appear that between seven and eleven percent of the overall population participates in group exercises or sports. One inference from the YWCA participation figure would be that other forms of group exercises (e.g., club or company) seem to account for more participation than the YWCAs, YMCAs, and other community programs.

Employee Fitness Programs

The number of studies assessing the nature and extent of employee fitness programs is limited. Further, much of the information suffers from arbitrary sample selection, deletion of small companies, limitations related to data collection proce-

dures, and analyses or conclusions that sometimes are based on small numbers of responding companies. Other well-designed studies typically were restricted to specific occupational groups or individual companies. Therefore, from the standpoint of providing either valid or reliable information, the available studies of employee fitness programs are less than adequate.

The results of the existing studies about employee fitness programs produced a wide range of information about such programs. Available data suggested that: 1) the incidence of such programs fell into the range of 18 to 30 percent for larger companies; 2) eligibility was greater for management and administrative persons than for other workers; 3) participation rates ranged from less than ten to more than 80 percent and were positively influenced by restricted eligibility, individual regimens, and convenient facility access times; 4) the rate of establishment of these programs was highest in the late 1970s as compared with earlier periods of time; 5) operational costs ran between $50 and $1000 depending on the type of supervision and facilities provided; and 6) psychological benefits were reported as acccruing from these programs, but other benefits (save for reduced absenteeism) generally were not demonstrated.

Student Physical Activity

Only a partial picture of student physical activity in the nation's high schools and colleges emerged from our review. Information for elementary schools was almost completely absent. Participation by students in both high schools and colleges takes

place in a wide range of school sponsored physical activities. Men and boys continue to greatly outnumber women and girls in participation for similar activities. However, female participation in the late 1970s continued to expand at a faster rate than that for males. Intramural sports were more likely to have higher participation rates than interscholastic/intercollegiate sports. Further, trend data from the mid-1970s indicate that mens' participation in intercollegiate sports was down for the first time in 20 years when measured against enrollment.

Information on physical activity from colleges provided the most data on different types of activity participation. Intercollegiate sports were found to account for only a small proportion of all college level participation. Intramural sports and informal recreation showed much higher levels of participation. More specifically, the generic types of activities and their contribution to total participation were: intercollegiate - 3.0 percent, intramural - 34.0 percent, physical education programs - 12.7 percent, recreation clubs - 1.3 percent, and informal recreation - 49.0 percent.

The availability of high school and college sports programs generally continued to expand in the late 1970s, especially for interscholastic/intercollegiate sports for men and women. Two-year colleges consistently offered fewer activities than four-year colleges. Further, sponsorship for womens' sports lagged behind that for men for both two- and four-year colleges. However, while women had more limited participation opportunities, the gap between the sexes was narrowing in the late 1970s.

Finally, required college physical education programs appear to be becomming less prevalent, and the length of the requirement, where extant, decreased. The most common physical education requirement was for one year.

In conclusion, important data about student physical activity and school physical education programs were mostly missing for elementary and secondary schools. Moreover, information on students' physical fitness status was missing at all levels with the exception of the three nationwide studies of students aged 10 to 17 which normed AAHPERD's Youth Fitness Test. However, it should be noted that ODPHP is in the process of starting up a study designed to measure the physical activity patterns and fitness status of schoolchildren and youth aged 10 to 17 in the Spring of 1983. This survey presumably will provide information which will fill some significant gaps in our current knowledge of elementary and secondary school student physical activity behaviors and physical fitness status.

CONCLUSIONS

While the results of our review produced an extensive and interesting body of knowledge about leisure time physical activity in this country, in the conduct of the study we became aware of gaps, deficiencies, and areas in need of future data collection and analysis.

When the study is viewed in the perspective of providing information on the physical fitness status of the U.S. population

and its exercise-related behaviors and attitudes, some gaps immediately become apparent.

- No descriptions of the physical fitness status of the population exist.
- The nature and extent of physical activity at work were not addressed in the sources we examined. This is important because work activity may be an important determinant of a person's physical fitness status.
- Physical activity associated with daily maintenance activities, e.g., going to and from work, chores around the house, etc., similarly was not investigated by the surveys reviewed.

Thus, a comprehensive body of information on physical fitness and activity should include measures of fitness, as well as physical activity at work, activity related to daily maintenance, physical activity participation during leisure time.

In addition to these identified gaps, there were deficiencies in the information we located. Even though many topics of interest were addressed by the sources examined, some desirable analyses were not and could not be performed since most of the information came from different surveys, thereby precluding integrated statistical comparisons. In addition, "regular exercise" was defined differently or in an ambiguous way by all of the surveys. This confounded the analysis and prevented drawing clear and confident conclusions. A third defect was that the seasonal nature of exercise was not explicitly addressed in these sources. For most sports, participation does not continue throughout the year. This seasonal aspect creates a problem for survey design in that it makes it more difficult to obtain a

reliable estimate of sports participation due to poor recall by some interviewees. Fourth, no means existed to determine the extent to which some exercises produced greater physical fitness benefits than others. Two other deficiencies that made the anlayses problematic included the use of inconsistent demograhic categories and the mixed use of prompted versus non-prompted response categories.

To address the deficiencies described above, Granville developed a questionnaire on leisure time physical activity that we believe will avoid many of the confounding problems that we found. Unfortunately, its length prevents inclusion here.

Finally, our analysis led us to the identification of three additional issues which should be considered in further explorations of physical activity patterns. First, it may be useful to determine whether individual activity patterns fall into core and peripherial activities. That is, it may be the case that, for any given individual, a limited number of activities (one, two or three) account for most of his or her physical activity. Peripherial activities would be ones that are pursued more sporadically. Greater knowledge regarding the relative contribution of various activities to the overall activity patterns of different populations would be useful to health/fitness promoters and professionals in their efforts to structure programs and encourage participation. Knowledge of seasonal aspects of physical activity probably would be an integral part of this issue.

Second, it may be desirable to conduct research on whether involvement in exercise has a synergistic effect, i.e., whether such involvement creates a desire to be more involved in exercise and sports. Survey information on exercise patterns, persons who feel that they do not get enough exercise, reasons for exercise, and benefits of exercise suggest that involvement in exercise may have such a synergistic effect. The relevant issues would include identification of the activity levels or thresholds for different populations at which activity begins to induce more activity. Also of interest would be the relationship between increased levels of activity and participation in a broader variety of activities.

A third consideration relates to the potential synergistic effect among various health promoting practices. For instance, are higher levels of exercise correlated with (or influence) other health habits, e.g., nutrition and weight control?

Greater knowledge about any or all three of these potential influences, if they are shown to exist, would be useful in directing health promotion or physical fitness campaigns.

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